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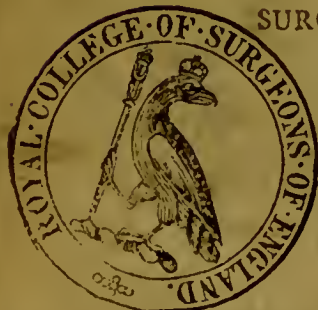
A

LETTER

TO THE
CRITICAL REVIEWERS,
ON THE
MOST EFFECTUAL MEANS OF PREVENTING
SICKNESS IN HIS MAJESTY'S FLEETS,
AND
DIMINISHING THE
EXPENCES OF MARITIME SERVICE.

BY WILLIAM RENWICK,

SURGEON IN THE ROYAL NAVY.



Feci omni obsequio.

L O N D O N :

PRINTED FOR THE AUTHOR; AND SOLD BY J. EVANS,
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1794.

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ADVERTISEMENT.

HOW delightful, says the panegyric on hospital ships, to contemplate the preservation of those who are fighting the battles of their country. The writer has the satisfaction of enjoying this happiness in a superlative degree, together with the consolation of reading in the *Spectator*, that virtuous cares compose their own reward.

The subject resumed in the following sheets, has long been favoured with the most distinguished testimonies of approbation; among which those of the tribunal they address, have not been least favourable. Hence the reverted rumours that have never been sufficiently founded. The bees which fatten on the hive, are not usually those that labour to produce the honey.

It

It has been said the author did not consult his interest, when he inscribed the work discussed in the ensuing pages, to the respectable personage whose recession from office had terminated the power of serving him. It was for the latter reason the dedication was the sooner supplied. There is often a satisfaction arising from considerations of which those who are only actuated by venal motives, are altogether unsusceptible.

*However tenacious in the sentiments he was early to promulge, the writer disclaims the illiberal idea which subsequent circumstances tended to suggest. He has evinced the same stability for the public welfare that discriminates his private attachments; and the country that would prohibit the latter, would not deserve the services which literary journals have announced to "claim the gratitude and respect
" of the British nation."*

PRELIMINARY CORRESPONDENCE.

“ *To the* AUTHORS *of the* CRITICAL REVIEW.”

“ Gentlemen, *Brunswick, at Spithead, July 5, 1792.*

“ MANY of the sources of disease, you are pleased to say, particularly those of the *bilge-fever* (a term I have recommended as the most appropriate) were obviated in the last naval armaments. Permit me to observe, that although the contrary had not been manifested in the prevalence of pestilential sickness, attended with early mortality; as the means adopted for its prevention were no other than such as had been always in practice, and which have ever been found so delusive, the idea of such prevention is manifestly fallacious.

‘ With respect to the publication’s being said to contain little that is new or interesting, you will allow me to add, that although a process which a royal physician endeavoured to establish fifty years ago, cannot therefore be called new, it is certainly interesting; being shown to be the only application by which the principal cause of naval sickness can be effectually prevented. It is also conceived to be both new and interesting, to have evinced that diseases which have always been ascribed to salted aliments, originate in the inspiration of bilge effluvia; nor will it appear

to be otherwise in the proposed remedy for obviating the effects of the former, and to which those of the latter are traced to be in no degree congenial. The appellation of *scurvy* cannot therefore be applied to both; and it has been demonstrated that all the symptoms ascribed to that malady at sea, are no other than the progressive effects of imbibed poison from the ship's atmosphere. Equally new and interesting are apprehended the observations respecting the use of beer, and the mode of procuring the essence recommended as a favourable substitute. Your last remark is not clearly understood.

“ W. RENWICK.”

‘ TO this we can only reply, that having particularly examined more than one ship of war in the last naval armaments, we found the attention to carrying off the bilge-water, and securing the ship from damps, as well as providing currents of pure air, so exact and unremitting, that we had reason to think our author's plans by no means new. That scurvy originated from damp, Anson's and Cook's voyages particularly demonstrated, if it had not been shewn by Roupee and almost every other author on the scurvy, that damp clothes added to the danger and violence of the disease. The use of beer, and the essence as a substitute, were certainly long since familiarly known. If, therefore, Mr. Renwick hoped to acquire fame by plans that were only new to those who were wholly unacquainted with naval affairs, we had reason for our concluding paragraph.’

CRITICAL REVIEW for October, 1792.

" *To the* AUTHORS *of the* CRITICAL REVIEW.

" Gentlemen,

Brunswick, Nov. 14.

" THE publication favoured with your further notice proposes, for the prevention of naval sickness, an invention ascribed to its proper author, together with a general use of the diet *first recommended by the writer*; plans that are known to Government not to be adopted in any ship in his Majesty's service. To these is added a proposal, *also originating in the writer*, for obtaining essence of spruce without any expence to the State.

" Beer is not mentioned to exhibit its utility; nor are the effects of *damp* [putrid vapour] introduced to prove that scurvy originates in that cause, but to prove the prevalence of more malignant disease. The work also evinces the insufficiency of means that are either impracticable in their continuance, or otherwise inadequate to the purification that is necessary. These, instead of being proposed as new plans, are represented to be in customary adoption, and reprobated for their manifested delusion.—Did the author wish to arrogate to himself the plans of others, or to propose (except in their improvement) such as were already adopted, he would not so attentively communicate them to those who are *most acquainted* with naval concerns; every publication on the subject being transmitted to the Boards for whose inspection they are chiefly intended.

" The insertion of this in your next Review, will not be refused to an author *whose labours for the public welfare you have so often applauded.*

" W. RENWICK."

WE have inserted this letter, according to Mr. Renwick's request, without being able to see that the state of the question is altered. If damp, or putrid vapour, is precluded by methods usually practised (and we *know* that they are so in harbour, nor are the methods which we have particularly examined apparently impracticable at sea) the proposal is not new.—The making essence of spruce without any expense to the State, would certainly be noticed by the Boards to whom our author truly says every new plan is communicated. It was not our object in reviewing a literary work, and here we beg leave to close the correspondence; adding only that we had no design to injure Mr. Renwick, and are sorry if remarks which we thought truth demanded should have that effect.'

CRITICAL REVIEW for January, 1793.

ABSTRACTS from other PUBLICATIONS.

“ *An Inquiry into the nature and causes of sickness in ships of war: shewing the error of its being chiefly ascribed to maritime diet, and that it cannot be prevented by the acids so generally recommended; by what means that prevention may be most effectually attained, and with least expense to the State. To which are added, a review of Sir John Pringle’s Discourse on preserving the health of mariners, with other medical disquisitions; including remarks on the Dispensatory of the London College. 8vo. 2s. 6d. Evans.*

“ Mr. RENWICK is of opinion that the diseases of seamen proceed more from the foul air of the ships, than from any other of the causes ascribed by those who have written on this subject. The means of prevention which he proposes, are therefore particularly calculated to obviate that circumstance. He appears to have been very attentive to the making of observations in his professional capacity; and his remarks in general are judicious, intermixed with ingenuity.”

ENGLISH REVIEW for July, 1792.

“ THE principal design of this publication is to prove that many of the diseases of seamen, which are supposed to be different appearances of scurvy, and to originate from salted food, &c. are, in truth, pestilential

pestilential or putrid fevers, caused by the noxious effluvia arising from the bilge-water; and which are hence termed by the author *bilge-fevers*. As this is certainly *a matter of importance*, we shall lay before our readers a part of what is advanced on the subject."

' IN tracing the general origin of naval sickness, it will be necessary to observe that the vapour in a ship's well is often so deleterious, as to cause an immediate suspension of the vital functions; nor is it difficult to conceive their progressive debility in a more remote influence of the contagious emission. This is more especially the case in ships that have their bottoms very tight. Hence it occurs that new ships are generally the sickliest, while those which are leaky are commonly found to be more healthy: a distinction that further evinces the mistaken idea respecting the diet which, being the same in both, should produce the same effects,

' On the resumption of armament, ships are commissioned that have long been stationary; and in which, during that period, the wells that are no otherwise purified, are only pumped when the water ascends to a certain height. This in most ships being said to be only once in the course of several months, it is easy to imagine how putrid must be the contents of which *a part always remains undischarged*. Agitated by the ship's motion when under sail, the most deleterious particles continue to evaporate, and to poison the decks where a necessity of *closing the ports* increases the evil. To this may be added the injudicious custom of pumping the wells in the morn-
ing

ing watch, when the stomach and brain are least defended against the vapour then most obnoxious.

‘ Under these circumstances many of the crew are soon debilitated, from a morbid affection of the spirits on which all pestilential effluvia so immediately operate, and the powers of the moving solids essentially depend : whence the varied phenomena so much hackneyed in professional detail. In particular habits, excrementitious humours erode the cellular texture, and Nature finds a vent for the imbibed poison ; in others, a malignant fever is earlier prevalent. The former being less susceptible of febrile affection, evinces the propriety of blistering in the latter. This is further indicated in *variolous* disorders ; where Nature endeavours to transude the morbid matter through the exterior membranes, but which in great debility she is unable to effectuate. Hence the fatality which in ships where the miasma is most infectious, occasions such a succession of hands, that in a short time they scarcely retain any share of their primitive complements.’

“ THE mode of preventing this disease which is pointed out by Mr. Renwick, is by the use of the air-pipes invented by Mr. Sutton, and recommended to the notice of the Royal Society, at the time of their invention, by Dr. Mead and Dr. Watson. Other observations are added which merit notice, and which shew Mr. Renwick’s zeal to promote the interests of the service in which he is employed.”

MONTHLY REVIEW for April, 1793*.

* The work is also favourably announced in the Analytical—the only other Review then extant ; but the analysis is too long for quotation.

“ Mr. RENWICK, in this work, steps forth once more *the friend of mankind*; particularly of that deserving order of men the sailors, the great bulwark of the nation. He laments and reprobates the parsimony that discourages men of medical abilities from serving where diseases are generally misunderstood, or ascribed to improper and inadequate causes; and hence, he says, the inefficacy of all the regulations that have hitherto been recommended for their prevention. He appears warm and zealous in the cause he has undertaken; and the adoption of observations that discover penetration and knowledge of his subject, might prove of considerable utility.”

GENTLEMAN'S MAGAZINE for Sept. 1792.

 LETTER *to the* CRITICAL REVIEWERS.

AS the subject, Gentlemen, of our late correspondence continues to be misunderstood, I trust you will permit me to be further explanatory. I am the more confident of obtaining this indulgence, as you will be sensible the controversy did not originate in criticisms to which I should have manifested a silent submission, but in misapprehensions that require every elucidation of which they are susceptible. Meanwhile I could have wished that the insertion of my first letter had not been four months in procrastination, and that the last had not also been reserved for a volume where the strictures to which it appertains are not to be found. If, in further discussion, I should not always be sufficiently perspicuous or precise; you will have the goodness to add to other causes, circumstances that may be in eventual recognition, when the extension of intercourse is no longer practicable.

During the professional services in which I have had the honour to be employed, an appointment to a ship of the line, on special requisition, made me early sensible of the importance of the charge with

which I was invested; that ship, though but a few weeks out of port, having returned so sickly, that many of her crew were said to have expired without any previous complaint, and others within a few hours after being taken ill. This, as usual, was denominated the dreadful effects of a disease which sea-voyages, or cruizes, are always supposed to occasion; although, as it is in most other ships of war, the same sickness had previously existed where the ventilation practicable in harbour, and a timely removal of the diseased, precluded the tragedies that were subsequently prevalent.

Such were the circumstances where prescriptions were amply supplied, without removing the contagion which every discharge from the ship's well only served to increase; putrid water being most obnoxious when stirred. (*Hence the first cause of febrile sickness in all ships recently commissioned*). You will perhaps say the operation is usually preceded by the influx of fresh; but whoever makes the experiment, will find that fresh water added to foul, occasions the whole to be offensive.—Customary fumigations were in succession, and the guns and buckets, together with the cabbins of officers, fresh painted—a remedy the latter, at no time salutary; but it was chiefly by means of fire, and the habituation of survivors to a polluted atmosphere, that the ship became more healthy. It is from the latter circumstance that bilge-fevers (as they ought to be termed) are, *after innumerable sacrifices*, in general declension when war has been long in continuance; while putrid sores and pectoral diseases, from rotten habits, continue to increase. Hence it occurs,
together

together with errors in prescription, that few seamen (the number of the whole considered) who serve in one war, are to be found in the next.

The scurvy being a disorder which had always been esteemed progressive, it was natural to conceive that such an appellation could not be applicable where prostration and debility had the earliest accession. Such was the sickness (originating in the poisonous state of the bilge) to which that of other ships has been often so congenial*.

Although in the daily statement given by the surgeon, various maladies are usually specified; they are mostly similar with respect to the source of infection. Neither at sea nor on shore, does the same cause produce in every individual the same disease. What gives one the gravel or dropsy, occasions in another the gout or rheumatism; and whether the seaman's complaint be a fore leg or a fever, they have usually both the same origin.

The learned Doctor Milman is said to assert, in a pamphlet lately published, that the scurvy and all putrid fevers are founded in muscular debility, and therefore diseases of the *solids*. The premises give no authority for such a conclusion. In the fevers antecedently mentioned, muscular debility is no otherwise consequent, than in the vital functions being weakened by a previous affection

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* It was at this period the writer commenced the efforts that have not ceased in the suspension of emoluments; and in which he took occasion to reprobate compositions that were more especially obnoxious in marine prescription, and which the College of Physicians in London have since judiciously excluded from their last reformed dispensatory.

in the *fluids*: whence the early recoveries recorded in maritime history, on removal from the place of contagion to an atmosphere where the blood was invigorated by purer respiration. This is also manifested in frequent relapses, till nature becomes familiarized to the poison by which survivors are ultimately incapacitated for further service. Hence, though pacific periods are so short, the usual apostrophe on every accession of armament—"What is become of our seamen!*

Such, Gentlemen, was the retrospect that occasioned inquiries which the magnitude of their importance, and connection with the public welfare, forbid me to relinquish. In a further appearance at the bar of your tribunal, I am trustful that, however otherwise defective, I shall not be found in
the

* For the cure of febrile diseases in the climate of contagion, bark and laudanum, *exhibited in ardent spirits*, are much recommended. These, admitting their asserted effects, can only counteract (and so would a glass of brandy *per se*) the poison in which the febrile languor has been shown to originate. The truth is, that their efficacy is chiefly prevalent in the vehicles that would be most efficacious without their ingredients.

Congenial with the above practice, is the customary treatment of constitutional maladies on shore. Weakly women are frequently advised, and *that* by the most eminent physicians, to use bark and port-wine for strengthening their stomachs; although it is certain that their stomachs do not ultimately digest the prescription. They are, however, prejudiced in its favour from the temporary influence of the vinous menstruum; which a modern author on female diseases has so improved, as to recommend to delicate ladies four table spoonfuls, daily, of a tincture made of the strongest *Nants*. A nota bene should have suspended the prescription during the pleasanter month in the year.

the remission of due respect, or to recede from the strain on which I have been occasionally complimented by your professional brethren.

From the investigation abovementioned, diseases which occasion such continued demands on the national community, were shown to require the application of a remedy that had no *intermission*, and could be extended in every direction to the *lowest parts of the ship*; and that the means in general use were not adapted to either of these requisitions. It was also manifested that such a remedy had been proposed at a remote period, under the patronage of one of the most distinguished characters that ever adorned the medical profession*. -- It was evinced to be the more estimable, in its tendency to preserve the bread and other provisions, which are usually so much injured from the state of the air where no purification is ever received: whence the insects and other vermin directed, in the last war, to be poisoned by a composition that must also have rendered such provisions otherwise insalutary; and which being only calculated to destroy the effect, could not remove the cause of the evil. It fortunately happened to be so offensive to the human stomach and nostrils in the mode of application, as to announce the trial the sooner abortive; and it were well if all other quackeries could be as timely abolished.

The

* Dr. MEAD.

The invention first noticed gave purity to respiration; in the depravity of which, and not that of diet (as usually conceived) naval sickness was shown to be chiefly prevalent. *That* sickness was also demonstrated not to be the scurvy, as had been generally apprehended; and for precluding the latter as well as other maladies, methods were recommended that were *altogether new*, and in which the lives of a hundred thousand seamen were *frequently interested*. Such was the publication announced to contain little that was *new or interesting*!

At the same time, you did me the favour to observe I might have known that methods were adopted, for the purification of ships of war, which the pages adverted to will be found not only to comprehend, but where they are also the subjects of particular discussion. It was from an acquaintance with such methods, that the publication was written which had not otherwise appeared. After evincing that these are no other than such as have been long in use, and exhibiting their general insufficiency--the work proposes, as a more effectual process, the machine which the Commissioners of the Admiralty will testify are not to be found in the service; and for obviating the usual effects of *salted aliments* (shown to be the sole cause of scurvy), a daily regimen is further recommended of which the writer has been the first proposer, and which their lordships will also affirm, has no establishment in his Majesty's navy.

To

* The introduction has shown the Monthly and other courts of literature to be of a different opinion.

To such propositions you were pleased to object, that in the last naval armaments you found the attention to *adopted methods* so exact and unremitted, that you had reason to think the writer's plans by no means new; which plans were the machine and diet abovementioned, *neither of which were included in the adoptions referred to.*

Though this was notorious to the Boards to which such plans were communicated, you thought proper to add that you had reason for making the remark complained of, "if the author hoped to acquire fame by plans which were only new to those who were wholly unacquainted with naval affairs." In this case, he certainly should not have communicated them to the Lords of the Admiralty.—They are, I beg leave to say, "unacquainted with naval affairs," who would affirm SUTTON'S AIR-PIPES to be among the means at present employed for the prevention of maritime diseases; and it was to evince their superior utility, that the pamphlet is professedly written which delineates their previous proposition by the inventor. Hence the obvious injustice in representing the author with wanting to appear original in proposing, as new, a process described in the work to have been proposed half a century before. The subsequent extract will further substantiate the error of such insinuation. 'Thus far the writer assumes no other merit, than having endeavoured to revive an attention by which millions of the public money might be saved, and the lives of thousands employed in the defence of their country eventually preserved.'

" Having

“ Having examined,” you have said, “ more
 “ than one ship, we found the *attention* to car-
 “ rying off the bilge water, securing the ship from
 “ damps, as well as providing currents of fresh
 “ air, *so exact and unremitted*, that we had reason
 “ to think our author’s plans by no means new.”
 If (what is known to every seaman) such plans
 were not comprehended in the attentions spoken
 of, the deduction is by no means consequent.
 Attention may include the methods in application;
 but it neither proves the efficacy of such methods,
 or that others cannot therefore be new.—It must
 likewise be observed that the proposed process
 for the ship’s purification, comprehends *one plan*
only; which is neither proposed as new, nor are
 its effects diminished by being otherwise. “ Plans”
 must therefore include the diet that is neither ap-
 plicable to the purification spoken of, nor is its
 having been proposed before (and this by the writer
 only) a sufficient argument for rejection; or that,
 when adopted, the practice will not be new.

The “ *attention*” of which a visit could only
 afford a temporary demonstration, is said to have
 been “ *unremitted*,” but it is not said—what every
 seaman would refute—that the operation of the
 methods adopted were in the same degree of con-
 tinuance; some of which, in their present mode of
 application, are shown in the pamphlet to increase
 the evil, and the continuation of others to be al-
 together impracticable.

In harbour, you found ports, hatchways, and
 other avenues to ventilation open, which at sea
 are often, and *that* for many days continuance,
 necessarily

necessarily closed. Even the sails that are chiefly depended on, and which existed previous to Lord Anson's voyage—besides their having no effect on the well where the evil is most prevalent—can only be used in favourable weather, and therefore of no utility when most wanted. This is very accurately delineated in a learned paper, read before the Royal Society when the efforts proved abortive which have not till now been resumed. Yet you have chosen to say, in opposition to what had been exhibited from professional knowledge, that the purification obtained *in harbour*, did not appear to be impracticable *at sea*. Not in weather adapted to that obtainment; but the same purification is no less necessary at other times, and which it has been shown the means in use are at *no* time sufficiently adapted to effectuate.

The following, among other "general orders," will also evince that ventilation, as far as it extends, is only temporary even in port. "The windsails "to be put down the hatchways immediately after "breakfast" (*manifesting that they were not to be used during the night*) "except in rainy or damp "weather." How far it is judicious to preclude the air essential to respiration, in order to preclude damp, let philosophers, and those who are conversant in the human œconomy, determine. A more noxious humidity is thence retained in the vapour of pulmonary and other effluvia, dispossessed of the vital principle that is more or less prevalent in every

state of the external atmosphere. Hence the debility that supervenes when air is excluded by tarpawlings laid over every grating, on the descent of drops that might, if deemed necessary, be absorbed by swabs placed to receive them.

The caution manifested in the above exclusion will appear the more *outré*, when it is considered that from the manner in which sea water is occasionally thrown on the lower deck, a considerable quantity escapes into the ship's hold; from whence, as it can only be purified by the process recommended, a damp and fetid vapour is continually exhaling.— Hence vertiginous and other morbid symptoms so usually consequent; and to which midshipmen are found to be less susceptible in their berths where candles are constantly burning, than in other parts of the deck where the same purification is not derived. Those who sleep in the cable-tier, more especially if what are called the ship's wings be lumbered, often manifest symptoms of poison, which are ultimately overcome by habit; but before this period arrives, such affections either prove fatal, or (except in particular constitutions) diseases are engendered that prey on the future existence of life. Hence the bad state of health by which the majority of naval officers would themselves be earlier debilitated, but for their removal by promotion to more favourable accommodations, and the amendments received on shore during the intervals of service.

From error in prescribed customs, hammocks (containing the seamen's bedding) are also piped down at sun-set, in every season and state of the climate; altho' in sultry weather, it is only at that
period

period of the day, that the decks can be purified by the circulation which is so much interrupted. Should any fears be entertained from evening-dew, they may be obviated in a recourse to the usual covering. When showers from which they might perhaps be always defended, occasion such hammocks to be removed at a more early hour, their purification should be resumed when the weather is more favourable, though but for an hour's continuance; a greater advantage being derived from the ventilation previously mentioned. This will be further elucidated in the details reserved for future discussion.

Taking down the windfalls at night, though the weather admits their continuance, is equally unfavourable with other customary practices. It was from necessary deviation and other attentions, that one of the ships in which, during your visit to Portsmouth "*harbour*," malignant fevers had such an alarming prevalence—returned from a subsequent cruize without any febrile sickness, and in a state of health which, under the existence of every circumstance, Apothecaries-hall has a greater tendency to accelerate than preclude. They know little of physic, and less of naval dispensaries, who would not affirm that the nineteen thousand pounds included in the accounts of Government for what was called the Spanish armament, might have been better expended*.

Cui

* Though the appellation given to the armament above-mentioned, was adopted by ministerial and other orators in parliament, it is certainly improper—as it literally implies an armament belonging to the country against which it was designed

Cui bono? is a term which, applied to the *spiritual* care of the service, is generally held to be immaterial; but the same indifference will not be admitted with respect to a care in which the welfare of service is more extensively estimated. How far the latter may be apprehended more effectual, let establishments determine that are chiefly provident in the requisition of supplies which, from their tendency to spoil, should never exceed the occasion; and where, whatever may be the stock on which Shakespeare might have so pathetically moralized, expenditure depends upon circumstances which must ever be discretionary. The quantity of requisite prescription is to be determined by the judgment of the prescriber; and if that judgment be defective, a deficiency of prescription will always be most favourable.

This will also be the case where *dispensation* is not more perfect. Here the most judicious prescriptions will be of no utility, and it were better that none were exhibited. Humanity will be most affected should it be added, that where domestic claims have been duly regarded, such encouragement

signed to act. The Spanish *armada* (a word of similar import) has always been understood to be a fleet fitted out by Spain, and the Spanish *armament* admits of no other construction. The armada under the latter term was certainly British, and can only be properly so denominated. When therefore future historians read of four millions being voted for the "*Spanish armament*," they may literally suppose that the money was intended for the court of Madrid. The armament now fitting out against France, may also with equal propriety be called the *French* armament, and that of the latter country be discriminated the English.

ment has been given to neglect and disobedience, as could only be remedied in a recourse which pacific minds are slow to prefer, or in the resignations which have been eventually consequent. From the same cause official communications have been so eccentrically received, as to require the protection which justified their propriety, and *that* from the highest authority of the State.

Power, however supported, should terminate in its abuse.

In reverting to other specified attentions, it may further be observed, that the morbid effects of the bilge are not precluded by the discharge which every ship-carpenter knows is never wholly effected; but in a continued application of the element that is also necessary to correct the air in other parts of the ship, and which neither wind-fails, nor the ventilators described in the pamphlet, are adapted to supply. These have no effect on the *well*, where the principal evil has been shown to exist; nor, were it otherwise, is throwing air into a place the same thing as drawing it out. The latter can only be accomplished by fire: an operation that destroys the malignant qualities of putrid air previous to its discharge, and from the incumbent pressure occasions, in its continuance, a constant succession of fresh. Such are the principles by which mines and other subterranean cavities are known to be sweetened, and such the powers of an invention the proposition of which,

after

after being so long dormant, has perhaps even some claim to novelty. This, however, can add nothing to the effects of a process which should have given the inventor *otium cum dignitate*. But so capricious is the goddess to whom poets have attached the fortunes of mankind, that her decrees have always been the admiration of historians, and *favet fatuis* proverbial in the annals of biographical literature.

The temporary use of embers for drying the decks, *when washed*, on which the ship's company resides, and which have no extension to places where, though most wanted, they cannot be safely carried—are, in their defective display, like the nominal compensations you have formerly reprobated, and on the subject of which I have so often met your applause. A more efficacious supply in any particular ship, will only afford the usual exception in all general circumstances. A fire may also, in a particular ship, be sometimes sent down into the well, *and the writer is happy to observe his publication likely to increase the practice, together with more continued ventilation*; but this is neither adequate to the extension or continuance of effects that have been shown to be necessary. It is not sufficient that the bilge be occasionally sweetened, but that it should always be kept sweet: the application for this purpose must not therefore have a temporary, but a continued effect. It is the same thing with respect to the hold and other places where (as observed before) fire has no access, and where there are no ports open to ventilation.—Hence the evident insufficiency of methods, what-

ever

ever may be the "attention," that have no tendency to correct the air where it is most corrupted.

When you visited the ships in Portsmouth harbour, you would doubtless walk round the decks that are usually exhibited on such occasions; but had you descended to inferior regions, or seen the recesses that escaped your observation—you would have recollected the celebrated Dean, who, on visiting a strange house, always ran down to the lowest apartments, in order to ascertain the purity which he conceived the state of the upper insufficient to testify. You saw windsails suspended which, had you gone to sea, you would have seen taken down at evening, or when the weather was supposed to render it more early necessary; and you perhaps saw a stove on the central deck that was removed as soon as the ashes were extinguished, and from which the lower parts of the ship derive no advantage. You might also inspect the machines that were not oftner worked than the operation was insignificant.

I am the more attentive to such considerations, because even where acute disease may be least prevalent, the animal humours (as before observed) receive the progressive contamination that engenders many chronical disorders, and by which seamen are ultimately so early debilitated. Hence originate ulcerations that add to the contagion of other morbid effluvia, and for the cure of which hospital *ships* are so manifestly unfavourable.—Such diseases require more spacious and lofty accommodations, with a freer circulation of air, than

are .

are to be found where exhaling vapour from putrid sores, is so immediately reverberated and taken into the lungs; whence hectic and other morbid affections that multiply the discharges so frequently consequent. (*Here it is obvious that the more lofty a ship's decks are, the more the crew are likely to be healthy.*) It is also easy to comprehend, that ulcers will be more difficult to heal where, like the orifice of inoculation, they serve as a drain for the poison in continued absorption. For such disorders it were better to substitute temporary hospitals on shore.

Convalescent ships are more expedient—in order to prevent desertion, and preclude too early return to duty. These purposes require a greater number than have been usually allotted; especially as those; for whose use they are intended, should not sleep on the lowermost deck, where the air is so unfavourable to recovery. It is also essential that convalescents should be so far recovered previous to reception, as only to require time and nutritious diet for further restoration. Such ships are otherwise, however nominated, virtually *hospital* ships.

It is a customary observation, that when a seaman has been twice at sick quarters he is no longer serviceable. From a deficiency of the former receptacles, removals are necessarily in such rapid succession, that men said to be recovered are again early in the sick-list, or discharged as too debilitated for further employ. Many of the latter, from the want of regulating *surgeons*, are afterwards restored to no other purpose than to be again dismissed.

Others

Others, after being many months in the pay and subsistence of Government, are ultimately invalided without having *ever* been of any other use than to infect the ship's companies among whom they were incorporated, and where their attempted cures would only have indicated professional ignorance.

Assigning such objects to harbour duty, is an error in surveys that adds to other causes of naval sickness. The requisitions of humanity are also extensively violated in such a decision; as the unhappy victims must eventually grow worse in the confined atmosphere which rotten lungs and putrid sores have a further tendency to contaminate, and which evidently occasion such ships to be improper receptacles for those intended for active service. Equally indiscriminate and injudicious, is the decision by which *rheumatic* sick are retained for climates to which they may never be sent, and where their recovery is at least problematical.—Meanwhile they continue in the public pay to no purpose; and are ultimately either committed to the deep, or returned to wards from which they are never called to a subsequent discharge.

These, however, are trivial circumstances, when contrasted with the general tendency of establishments that have been shown to reverse the purposes of their institution. Were these to have all the discussion that might be supplied, public attention would quit the shores of Africa, to contemplate calamities that have a more extensive prevalence, as well as a nearer claim to alleviation. The most solemn department of service, should certainly be made the most respectable. This can

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only

only be done in the extension of rank that would cost the State nothing, together with such ultimate rewards as might preclude the necessity of ships failing to engage the enemy with only half the number of medical officers they are meant to contain; while others complain of being without *any*, or obliged to accept of such as can be had.—*Government*, said Examiners to a complaint cited in a publication for which I had the thanks of the Admiralty, *does not give sufficient encouragement for more eligible servants**.

These are sentiments which, in their correspondence with the writer, the late Lord Mulgrave (than whom no man was more qualified to judge) with other distinguished personages, admitted to be duly founded; and who promised to *second* in parliament any motion in favour of the officers adverted to. It does not add to their fame, that they declined being *foremost* in the most important cause that ever agitated a national senate.

Preceding observations have shown, that the methods in temporary use are neither sufficient to preserve ships from “damp,” nor to exclude the principal cause of the sickness discussed in the pamphlet I return to vindicate. This was described to be the mephitic effluvia (absorbed in respiration) from the well and bottom of the ship, which

* The *most effectual* encouragement would be found in a liberal superannuation.

harbour; it is no proof of the sagacity of maritime writers (however eminent) who gravely affirm that sickness is found to increase after the beer is expended which, from *that* circumstance, is urged to be so salutary.—Nor because the use of it was also previously known, were it therefore held improper to recommend a more eligible drink to which the same criticism was opposed. Were this the case, the acids and other stale plans to which you had *previously given your approbation*, should not be so frequently reverberated by those who mistake, for scurvy, affections evinced to have a more deleterious origin, and to be essentially different in their nature and consequences. A plan (also originating in the author) is suggested for obtaining the extract of which the above drink is made, *without any expence to the State**.

Various plans have been offered for keeping water sweet, but none that could possibly answer the purpose. The best would perhaps be *tinning* the casks into which it is received. It is thus that *copper* utensils are preserved from being obnoxious; and although such a proposition does not equally afford matter for chymical discussion, it may be no less deserving the attention of royal societies and the naval departments of Government. It requires to be the more regarded, because whatever may have been the communication
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* A due attention to this proposition—calculated to preclude the necessity of drinking either bad beer, spirits, or water—would not only be greatly in favour of the health of seamen, but an *immense saving to Government*.

to liberally rewarded for rendering salt-water fresh, and which can never be rendered *wholesome*; either from inconvenience respecting the process, or the impracticability of obtaining a sufficient quantity—it appears to be thought more eligible to continue in the use of water which is always drank in a state more or less putrid. Though the last cruize made by the guard-ships was only of a month's continuance, the casks were so full of animated putrefaction, that it was matter of amusement to observe the myriads which were in perpetual commotion. Officers who could not swallow them alive, drank them in *decoction*, by having the water boiled.—Here, again, we see the salutary use of tea; which, by early removing the cause of thirst, lessens the quantity of unboiled water that is otherwise imbibed. This is the more deserving of attention, as the latter, when in the state described, has a tendency to occasion fluxes that are often contagious, and the cause of much mortality.

I have said that salt-water is not rendered wholesome by being freshened. For although showers of rain, which afford the *purest* water, are partly produced by exhalations from the sea; the latter derive those qualities from the atmosphere that are not communicated in the chymical process which, though of little utility, procured a few years ago a reward of five thousand pounds. A *fiftieth part* of that sum comprized the remuneration subsequently mentioned!!!

They know little of human decisions, who apprehend that claims on the public are always duly appreciated.

appreciated. The merit of a book, says an eminent publisher, usually goes no further in subscription than the author's particular interest can carry it; and in the estimation of public services, it is seldom that national rewards are otherwise discriminated.

“ That scurvy originates from *damp*, Anson's and “ Cook's voyages particularly demonstrated, if Rou-
 “ pee and other writers had not shewn that *damp*
 “ *cloaths* added to the violence of the disease.” Ad-
 mitting the sickness for which a remedy not in
 use has been proposed, to be the scurvy—there is
 no affinity, in their qualities or effects, between the
 moisture of apparel wet with rain or salt-water,
 and the putrid vapour by which respiration is cor-
 rupted. Damp cloaths, by shutting up the pores
 of the skin, will certainly add to the violence of
every disease; but besides the dissimilitude just
 mentioned, this does not prove that the malady
 treated of, was the disease which has been shewn
 to originate neither in damp, nor in pulmonary
 pollution. A continuance of salted diet, in a favour-
 able climate, produces on shore what is deemed
 to be properly the scurvy; but the disorders inci-
 dent to a marshy and unwholesome residence, are
 in no degree congenial. In the former, the fluids
 are rendered too acrid from the saline saturation,
 and cutaneous eruptions supervene that are chiefly
 troublesome in the itching they occasion; in the
 latter, the vital principle is diminished, and mus-
 cular

cular debility, with a morbid state of the several functions, are eventually consequent. How these different effects can be made to constitute the same malady, Apollo himself would be puzzled to comprehend.

That such affections are no way analogous, is at sea (where they are most prevalent) further evinced in the putrid ulcers—from imbibed poison—that are so dissimilar to the scaly and other defecations from saline matter lodged in the excretories, and which, by villicating the membranes, occasion the irritation previously noticed; whence the cutaneous disorders which, *on shore*, have had a progressive declension as the use of tea became more general; but which are still prevalent where that regimen is only in use among officers, whom it preserves from the complaints of the common seamen. Maritime writers who copy each other have, without any discrimination of climate, attributed the superior health of the former to the use of punch; but the fact is, that in home-cruizes, the officers who indulge most in that acid mixture, are generally the most unhealthy. Although their complaints are usually conceived to be *biliary*, the work you have mis-comprehended, demonstrates the term to be altogether erroneous.—It may here be further observed, that even in climates where such fruits are more salutary, the constitutions of British and other northern subjects, in whom there is more phlegm and less bile, will seldom bear them in the same frequency or proportion as those who are natives of the country in which they are produced.

Saline

Saline particles being soonest resolved in warm water, it is hence that thirst occasioned by salt meat, is soonest quenched by tea—the most effectual diluent taken into the circulation; having an early descent through the ureters, and carrying along with it whatever is obnoxious to the animal œconomy. Without the introduction of this salutary regimen, in vain has Dr. Lind, and other learned writers, recommended the vegetable supplies which no methods have been able to continue, and of which the supposed effects are so misfounded; the amendment, on ships coming into port, being mostly consequent to a discontinuance of the bilge-fluctuation, a greater circulation of air, and a communication with the shore. Recovery is said to be effectuated by fruits and vegetables; but it is forgot that these are not in use till the ship is at an anchor, and the diseased removed to sick-quarters. Nor at sea has abstinence from salted meats, precluded the sickness they are supposed to occasion. Doctor Lind, indeed, has mentioned a home-voyage in which a diminution of salt, and a proportionate substitution of fresh provisions, had preserved the ship from being as sickly as in going out; but he has not observed how far the weather might be more favourable to ventilation, or the bilge-water less agitated; circumstances on which the comparative state of the voyage more immediately depended. Similar investigations have shown that there was nothing extraordinary in the celebrated voyage of Captain Cook, and that the healthy state of the ship commanded by that unfortunate navigator, was not owing to the infusion which subsequently put the
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nation to a considerable expence, for a contract that rather tended to increase than lessen the sickness in the navy at large; nor could an ounce of dried cabbage, introduced on the same visionary foundation, prove a sufficient antidote against the poison which neither were adapted to remove.—It may here be added that the diversity in what are called land and sea scurvies has always been so conspicuous, as to excite in the most learned authors, an acknowledgement of their *appearing* to be different diseases, as they really are; but being ascribed to the same origin, they have at the same time been conceived to be necessarily of the same genus.

I now request permission to advert more closely to the objection you are pleased chiefly to urge.

It does not follow that a proposition is to be rejected, because it is not new; nor does it prove a thing not to be new, because it is applied to the same purport for which something else is already adopted. In your last remarks, where you desire to conclude the correspondence, you continue to assert that “if damp is precluded by methods usually practised, the proposal”—that is, the proposal of a process *altogether different*—“is not new.”—It might as well be said, that if cloaths are made clean in the tubs where they have usually been washed, it proves that the patent-mills lately invented for the same purpose,

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cannot

cannot therefore be new. To a treatise written on the subject, it might also be shortly objected, that the purposes of washing had long been in the public knowledge; and that therefore the author must not think “to acquire fame by plans “which were only new to those who were unacquainted with” the affairs of the laundry.

Other methods may certainly be new, notwithstanding the efficacy of those in customary practice. The manner of fabricating cotton and other manufactures by the machines now in use, was found to be new, although the same materials had been previously fabricated by other means. Implements of every construction have been rendered more subservient to their respective uses by alterations which, though only adapted for the same purposes, were nevertheless admitted to be new. Improvements in agriculture have always been considered as new, though corn and hay were before obtained by methods that were less effectual; and Mr. Palmer’s plan for the increase of the revenue (which a pension of three thousand pounds a-year has shown to be a more fortunate invention than plans for the preservation of lives) was also esteemed to be new, notwithstanding literary intercourse was in previous circulation.—Physicians likewise conceive as new, every recent mode of treating diseases for which various remedies were in antecedent prescription. [In his situation, you say, the author might have known that means were *already adopted*—you might have added, and the same means too that have been in adoption for more than half a century, and which
more

more than half a century has shown to be so ineffectual]. On the other hand, it is not necessary that a remedy should be new, in order to be efficacious.

To reduce the controversy to a single observation, and at once to evince the error of the charge that has been quoted; it is only necessary to subjoin that although the methods in use for purifying ships of war—or, as you have chosen to express it, for the preclusion of “damp”—were always as practicable and efficacious as they have been comprehended, still it must be admitted they do not include the process of which the principles and operation are known to the Royal Society to be *so essentially different*; and with respect to their *utility*, it is the same thing whether the proposal be new, or a thousand years old.

On the proposed diet to which nothing analogous could be adduced, you are altogether silent. *That diet is not only preferable to all other remedies for preventing scorbutic affection (having an immediate tendency to resolve and discharge the saline particles by which it is occasioned), but is moreover a considerable preservative against every species of contagion.* From the effect mentioned in the parenthesis, it also lessens the necessity for other liquids: a circumstance favourable to the stowage by which ships are usually so much incommoded.

“The proposal respecting the essence of spruce, “would certainly be noticed by the Board to whom “our author truly says every new plan is com-
E 2 “municated.”

“municated.” This remark may be conceived to imply approbation; and though not in coincidence with the manner in which the proposition is previously mentioned, I have no inclination to distort what may be the result of maturer deliberation. Perhaps the thanks I had the honour to receive from the learned communities to which it was transmitted, were also more in favour of the publication than you have been willing to admit. At the same time, the royal physician’s observations on the facts cited in the pamphlet, are unfavourable to the early notice you have been pleased to apprehend. It will not however be less obvious, that whatever reduces expenditure, virtually adds to the Revenue*.

After these further elucidations, it is submitted to your superior judgment, whether the manner in which you are so good as to express your concern for criticisms which “*truth demanded*,” are to be esteemed as complimentary or otherwise. It was not deemed sufficient for the Republicans with whom we are at war, to assert their having no
hostile

* “*So you expect a pension equivalent to the comptroller’s?*”
—By no means, gentlemen. A cipher *less* would sufficiently realize all the sinecures which the imposture, Fame, has occasionally conferred, with even chivalry itself—disgraceful boon!
 (“*The fox and the grapes*.”—Very true, gentlemen).

—“ Such knights there were in happier days of yore;
“ Those days, those knights, the world records no more,
“ Not even the Sage who, in sublimer strains,
“ Deplor’d protection that no longer reigns;
“ With lance or spear (relinquish’d arms) essay’d
“ To free the Queen whom civic guards betray’d.”

hostile intention, while they persisted in the vindication of their procedure. See *Lord Grenville's correspondence with M. Chauvelin*.

A considerable time has elapsed, since the preceding sheets were sent where multiplicity of business is assigned as the cause of their protracted publication. I now close the address apprehended to have been occasioned by your confidence in those who found it their interest to deceive you; and though you should still esteem it necessary to protect such a procedure, you will secretly deprecate the imposition.

I have, Gentlemen, the honour to be

Your very humble

and most obedient Servant,

WILLIAM RENWICK.

PORTSEA, Dec, 31, 1793.

APPENDIX.

A P P E N D I X.

To the COMMISSIONERS of SICK and HURT.

“ GENTLEMEN,

Brunswick, Spithead, Aug. 28, 1792.

“ **H**IS Majesty’s ship, the Brunswick, has returned from her cruize without any diminution of her complement, and entirely free from both febrile and scorbutic malady ; though unsupplied with remedies that have only served to increase the public burthens. This salubrity where, during the late armament, the bilge-fever was so prevalent—is not to be ascribed to the early removal of diseases, but to their prevention by means that are still short of what has been recommended in the publication I had lately the honour of submitting to the naval departments of Government. On a continued attention to such means by those who have the power of supplying them, and not on the medicine-chest, depends the preservation which the greatest professional abilities will otherwise endeavour to effectuate in vain*.

“ It

* It will hereafter be shown, that neither what are called weekly accounts, nor the number of the sick at hospitals, exhibit perfect estimates of the state of the navy.

“ It is worthy to be remarked, that while one of three patients (including a casualty) for whom alone a sick-berth was necessary rejected other food --he attempted, during delirium, to spring from his hammock, whenever the *tea* approached that was so eagerly caught at; being, as I have formerly observed, the most grateful and salutary diet in fevers, as well as the best antiscorbutic for resolving and discharging the saline particles with which the blood is saturated in a long continuance of salted food: whence the corrosive diseases which are alone with propriety denominated scorbutic, and to which, disorders originating in putrid air have been shown to be so dissimilar*.

“ I am, Gentlemen,

“ Your very obedient Servant,

“ W. RENWICK.”

* It was some years ago submitted to Government, whether, though a diet of tea should not have a more general extension, it would not be eligible to allow it to the *sick*. The writer is happy to find that since he last resumed the subject, the suggestion has been ultimately approved; and trusts that the aliment now allotted to ships of war (where he hopes to see it in *general* use) will be further extended to naval hospitals. It is an admirable auxiliary to every medicinal prescription; and when qualified with milk, and taken with soft bread--exceeds every other species of febrile regimen. Were the latter article also allowed at sea, as formerly recommended; it would prove more nutritious than either portable soup or sago. Even milk itself might be obtained at little expence from goats, should *cows* be disapproved.

To Dr. LIND, *Physician of Haslar-hospital.*

" SIR,

Spithead, Dec. 4, 1798.

" THE Vulture being manned with invalids, whose diseases have naturally increased on the accession of winter, and to which a ship's atmosphere is always so unfavourable; it will be more especially necessary to trouble you with those whose disability was officially reported by my predecessor, now a Commissioner at the Board to which I have been so often translated without commissional authority. I need not add that your humanity will be interested in their ultimate discharge; constitutional disorders being incurable even at an hospital, and their temporary mitigation of no advantage to the public service. There are impositions against which no professional knowledge is sufficiently competent, but obvious maladies should be duly regarded.

" Amid the present liberality of public subscriptions, I am asked if extra-cloathing is not as requisite for the navy as the army. In northern cruizes, it would doubtless tend to preclude many diseases that originate in the suppression of necessary perspiration. Authors who represent such cloathing to be equally salutary in *tropical* climates, might as well assert that the dresses appropriated to winter in England, or any other country

country, is also the most proper for summer; and that the maladies occasioned by heat are best treated in its extension, though generally productive of those which are most malignant. Hence the fever at Philadelphia: a disorder evidently originating in the atmospherical depravity a timely removal from which, to a purer air, will ever afford the most effectual relief. In a continuance of the cause, the morbid humours, though frequently discharged, are often regenerated--till the bile, on which the contagion mostly operates, is in such diminution as to be no longer offensive; when recovery depends on the vital power it is therefore so necessary to sustain. For this reason, though evacuations be primarily indicated, they should be such as have the least tendency to weaken the system.---To obtain the remedy so preferable to every medical prescription, tents might be erected at a sufficient distance, to which the sick should remove on the first appearance of infection. This will appear the more eligible, when we consider that such maladies are only discontinued in a purification of the climate where they arise, or when a favourable change in the atmosphere terminates the pestilence*.

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“ My

* The writer formerly recommended the translation of naval convalescents to a rural hospital, previous to their being received into convalescent *ships*: a plan which he was lately informed had the approbation of an unfortunate admiral, who perished at Spithead while his attention, assisted by the respectable officer from whom the information has been received, was occupied in ascertaining a proper spot for its establishment.

“ My sentiments respecting the *proximate* cause of the contagion adverted to, are congenial with those of the learned Doctor Rush; the *remote* is not so easily investigated. It is possible, however, that at particular seasons, when the weather is for some time more than commonly sultry, with a long discontinuance of rain; epidemic diseases may originate in the mephitic vapour emitted from the receptacles of the dead. Hence the impropriety of burying in churches, and having burial grounds in the centre of populous towns*.

“ In the apprehension that some persons were buried alive, an address appeared several years ago from the pen of a very respectable physician; in which the public were advised to procrastinate interment till dead bodies were in the *first process* of putrefaction: a discrimination to which the usual attendants could not be supposed competent, and therefore not likely to be in timely observance. It was contended, in reply, that a lesser evil (admitting the fact) should never be removed at the expence of a greater; and that pestilential sickness would often be consequent to the procrastination recommended. However nations may be alarmed for the importation of
any

* The disease announced in the public prints to have proved so fatal to the troops (confined in transports) under the command of Lord Moira, is said to be “ in many respects similar to the yellow fever in the transatlantic hemispheres.” The fact is, that all fevers occasioned by putrid air, are virtually the same in every part of the world, except that in the warmest latitudes the bilious fluid is most exalted; whence the suffusion by which such fevers are usually distinguished.

any malignant distemper, the protraction spoken of would have been far more injurious; and I am free to affirm that the subject, in its possible tendency, was more interesting to the community at large, than any temporary event resulting from the operations of war.

“ Although, as on other occasions, I was then *solitary* in combating the public cause; I was not, I trust, altogether unsuccessful. Subsequent efforts have chiefly respected the element where, however esteemed to have the foremost claim to promotion, I am in no delusion from reports that continue to reverberate with all the diversity of which they are susceptible. Historians have had occasion to notice, that a grain of interest precedes a pound of any other recommendation; and to those who have been most laborious in the service of their country, the liberality of the public voice has only been sufficiently regarded when it was too late to be effectual*.

“ I am,

“ SIR,

“ your very humble servant,

“ W. RENWICK.”

* * Just as the press had brought this pamphlet to a conclusion, a paragraph has appeared in the London prints which ought not to pass unobserved.

“ All the transports for Lord Moira’s expedition, are sitting up under Sir Jerome Fitzpatrick’s inspection—on a principle *hitherto unknown*, and ENTIRELY the child of Sir Jerome’s persevering philanthropy. Each vessel will contain a ventilating machine; the ingenious construction of which is to admit, by means of *tubes*, the fresh air at the moment that it expels the foul.” This being literally the avowed principle of the *pipes* recommended by the writer two years ago, the public are left to judge how far the preceding complimentary assertions are founded.

Legitimate children, to speak in the language of the paragraph, are not always the most fortunate. Dr. Lind, on the subject of freshening salt water, complains that five thousand pounds to which he had a previous claim, were given to the person who deceived parliament by a less favourable communication. Whether, on the present occasion, the knight or the writer will have the reward, must be left for time to determine; nor will the efficacy of the machine last mentioned, be disproved by a *less effectual imitation*. Unless the process includes the element employed in the former, and the tubes are constructed of the same materials, very inferior effects will be produced.